



# Upscaling Mini-grids for Least Cost and Timely Access to Electricity Services

**SREP round table**

**Vanuatu**

**Myanmar, Feb 6, 2017**



# Country background

- Island country in the South Pacific
  - 82 volcanic island, spread over 1,300km
  - Population: Approx. 270,000, over 55,000 households
  - Over 78% in rural, rest in urban centers
  - Only 4 islands with grid connections (operated by private companies)
    - Grid generation: approx. 77% diesel; 10.7% hydropower; 7.5% wind power; 4.4% coconut oil & 0.2% solar



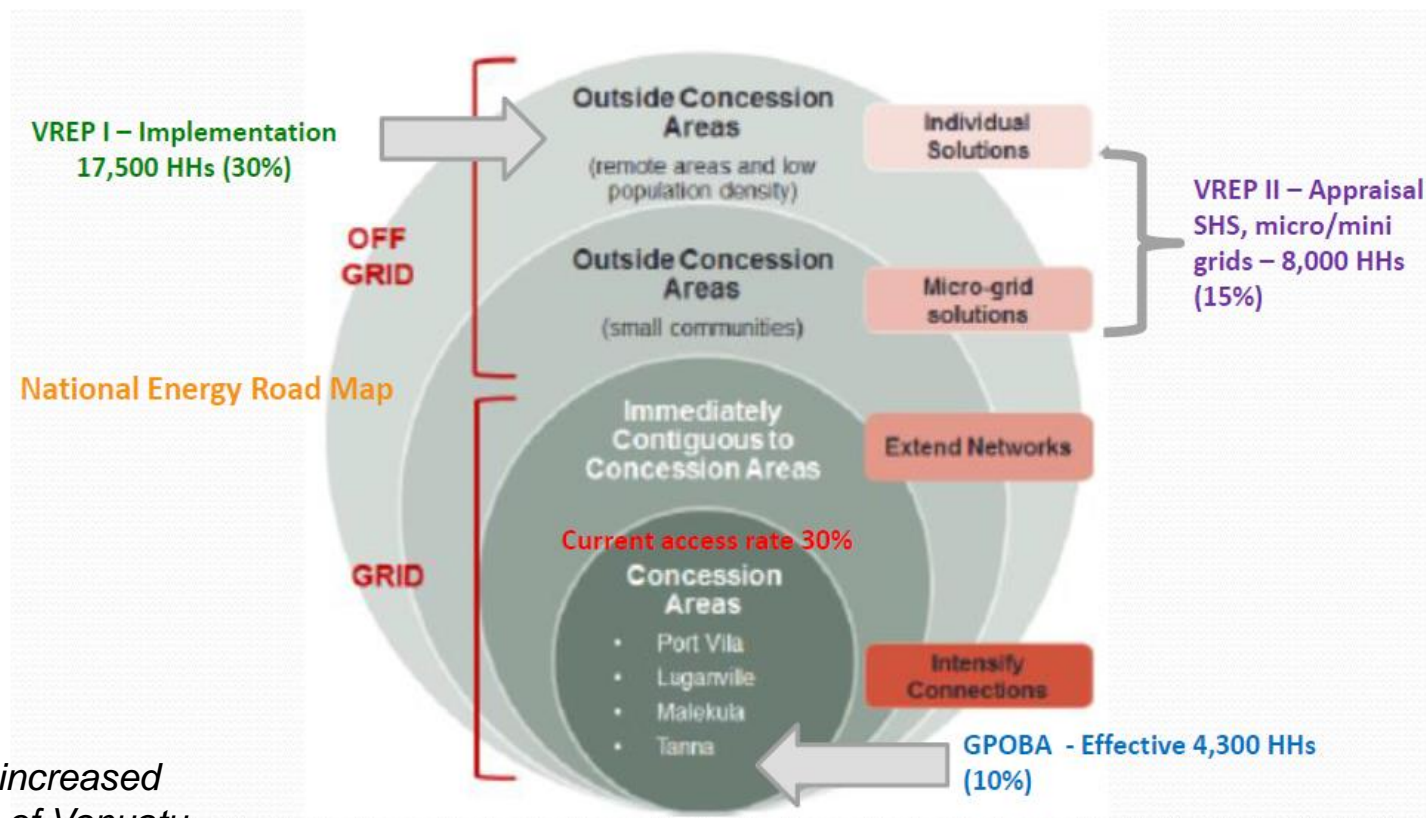
# Project outline

## Vanuatu's SREP Investment Plan

- Hydropower Project Investments through ADB;
- Vanuatu Rural Electrification Project (VREP) through World Bank.
  - ① VREP 1: "Plug and Play" solar systems under vendor model to consumers in rural and remote areas (Implementation stage); and
  - ② VREP II: Solar Home Systems, micro and mini-grids

## VREP II Project Development Objective

- *To support increased penetration of renewable energy and increased access to electricity services in the dispersed off-grid areas of Vanuatu*
- **Beneficiaries:** Households, public sector institutions, community institutions and business in off-grid or remote areas suitable for SHS, mirco and mini-grids.
- **Target:** Approx 8,050 HH (SHS); 37 Public Institutions (micro-grids); and five (5) mini-grids.





# Project outline

## Project Financing – VREP II

SREP – US\$6.4m

IDA – US\$4m

NZMFAT – US\$3.4

GoV 'in kind' – US\$1.5m

**TOTAL: US\$15.3 million**

## Project Components:

### Component 1: Solar Home Systems (SHS) and Micro grids (US\$5.1m)

- Demand driven
- Available to rural households (7,500 households) and public institutions (37 micro-grids) or approx 37,500 people;
- Partially subsidised at approved vendors and equipment designed to international standards;
- Information provided through Product Catalogue

### Component 2: Construction of mini-grids (approx. \$6.8m)

- Construction of 5 mini-grids
- Benefit 550 households (2,750 people, public institutions and businesses)
- Recipients selected based on Voluntary Land Donation and detailed viability assessment of capacity to pay tariff
- Construction and commissioning by Service Provider
- Operated and maintained under Management Contract and rolled into current concession contracts.

### Component 3: Project Management (approx. \$1.9m)

- Project Team; Govt Engineer, Vendor registration & Project Operations



## Status

- **Disclose final ESMF** – finalized
- **Finalize and disclose RPF** – on critical path to be finalized and disclosed before appraisal.
- **Prepare Terms of Reference** – preparation of product catalogue and standards for SHS.
- **Prepare Terms of Reference** – Owner's Engineer to support implementation of Component 2.
- **Prepare Project Operations Manual (POM) and Subsidy Implementation Manual (SIM)**
  - Update **POM and SIM for VREP I** to include components 1 and 2 of VREP II.
- **Update ECOP for VREP I** to include SHS and micro grids.
- **Disclose ESMF and RPF** – December, 2016.
- **Project appraisal by NZMFAT** – December, 2016.
- **World Bank Decision Review** – December, 2016.
- **Approval by SREP Sub-committee** – January, 2017.
- **Appraisal and negotiation** – January 2017.
- **Board approval** – February, 2017
- **Legal agreements signed** – February, 2017.



# Issues

## Potential Perceived Risks

- Institutional Capacity Risks: Capacity of the Dept of Energy (Implementation of funded investments) and Utilities Regulatory Authority (manage competing demand for lower tariff)
- Technological Risks: Remoteness of the Islands is a challenge for the systems (ongoing operations and durability to weather conditions)
- Environmental Risks: Potential for some clearing during construction of mini-grids
- Social Risks: Land ownership & managing dispute
- Financial Risks: Cost of the systems and affordability issues by Customers.



# Questions on moving forward